

Nevada Division of Environmental Protection  
Bureau of Water Quality Planning

-D-R-A-F-T-

Proposed Revisions to Ambient Water Quality Criteria For Bacteria

FACT SHEET

August, 2002

Background

Section 303 of the Clean Water Act and 40 CFR 131 give states responsibility for setting, reviewing and revising water quality standards. Water quality standards include criteria that provide limits on a particular pollutant or limits on a condition of a waterbody designed to protect and support a designated use. Under Section 304(a) of the Clean Water Act, the U.S. Environmental Protection Agency (EPA) publishes and periodically updates water quality criteria reflecting the latest scientific data and information on the environmental effects of pollutants. The revised criteria are used by states to modify water quality standards that provide for the protection and propagation of aquatic life and wildlife; for recreation in and on the water; public water supplies; and agricultural and industrial uses. State of Nevada requirements for water quality standards are contained in the Nevada Revised Statutes 445A.425 and 445A.565 and water quality standards for waters of Nevada are found in the Nevada Administrative Code (NAC) 445A.119 through 445A.225.

The Nevada Division of Environmental Protection (NDEP) is proposing a revision to the existing bacterial water quality criteria for various waterbodies throughout the state. The proposed criteria are based upon EPA recommendations for protecting recreators from contracting gastrointestinal illness during water-contact and non-contact recreational activities. This proposal involves incorporating recommended bacterial water quality criteria for *E. coli* into the regulations for the following designated waterbodies: Carson River system, Walker River system, Chiatovich Creek, Indian Creek, Leidy Creek, Virgin River, Beaver Dam Wash, Snake Creek, Truckee River system, Colorado River system, Humboldt River system, Muddy River, Meadow Valley Wash, and Snake River system.

The EPA recommended *E. coli* bacterial water quality criteria for freshwater are listed below (EPA Implementation Guidance for Ambient Water Quality Criteria for Bacteria - May 2002 Draft).

		Single Sample Maximum Allowable Values (number/100 ml)			
Indicator	Geometric Mean Value	Designated Beach Area	Moderate Full Body Contact Recreation	Lightly Used Full Body Contact Recreation	Infrequent Used Full Body Contact Recreation
<i>E. coli</i>	126	235	298	410	576

The recommended bacterial water quality criteria consist of a geometric mean and single sample maximum allowable value (single value) based on the frequency of use of the waterbody and the corresponding degree of body contact with the water. Both the geometric mean and single values were derived based on specific illness rates. When EPA promulgated changing the indicator organism used to measure bacterial water quality, an illness rate of 8 illnesses per 1000 swimmers in freshwaters was used to derive the new criteria. This illness rate provided a similar level of protection as had been previously provided by the existing fecal coliform criteria.

The single sample bacterial-indicator values were developed by EPA to provide the level of protection as described above based on the frequency of use of the waterbody. The most conservative single sample value was assigned to beach areas because a more conservative approach should be taken in the protection of heavily-used recreational waterbodies. Conceivably, less intensively used areas may have less restrictive single sample limits applied to them.

Surface waterbodies contained in the Nevada water quality regulations are designated for either water contact recreation or non-contact recreation. Water contact recreation involves activities where contact with the water occurs and the potential for immersion in and ingestion of the water exists. The bacterial water quality criteria outlined above would be protective of the waterbodies with a water contact designation. Non-contact recreational use of a waterbody has been interpreted to mean recreational activities incident to shoreline activities that generally do not involve immersion in the water. EPA has recommended that for those waterbodies used for recreational activities where very little direct contact with the water occurs and where ingestion of water is unlikely, a criterion equal to five times that of the geometric mean proposed for water recreational uses be adopted. EPA has not recommended a non-contact recreational use single-sample maximum value for *E. coli* at this time.

The following *E. coli* water quality criteria are proposed by NDEP for inclusion in the Nevada water quality standards.

For waterbodies with water contact recreation as a beneficial use and which do not have a designated beach area:

Annual Geometric Mean (A.G.M.)	<126 per 100 ml
Single Sample Value (S.V.)	<410 per 100 ml

These recommended criteria would be applicable to the majority of the aforementioned designated waterbody standards proposed for revision. Exceptions are discussed below.

For waterbodies with water contact recreation as a beneficial use and which have a designated beach area:

Annual Geometric Mean (A.G.M.)	<126 per 100 ml
Single Sample Value (S.V.)	<235 per 100 ml

These proposed criteria would apply to Lake Lahontan within the Carson River basin, Topaz Lake and Walker Lake within the Walker River basin, and the Colorado River reaches contained in the Nevada water quality regulations.

For waterbodies with non-contact recreation as a beneficial use:

Annual Geometric Mean (A.G.M.)	<630 per 100 ml
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Designated Nevada waterbodies with a non-contact recreational use include the Virgin River and Muddy River system.

To ensure consistency and continuity in a state's water quality program, EPA has recommended that both fecal coliforms and *E. coli* be included in the water quality standards for a limited period of time. This approach would allow states to establish an adequate database for *E. coli* that would support subsequent revisions of bacterial water quality criteria during future reviews by states of their water quality programs.

At this time, NDEP is not proposing to revise the bacterial criteria in the water quality standards for the Class Waters; Smoke, Bronco, and Gray Creeks; Lake Tahoe and tributaries; Lake Mead; and Las Vegas Wash. Appropriate changes to the bacterial water quality criteria will be made when the standards for these waters are reviewed and assessed in detail as part of NDEP's triennial review schedule of established water quality standards. Additionally, no changes are proposed for the sections of rivers contained on tribal lands, which include the Walker River from the inlet to Walker Lake to Weber Reservoir, the Truckee River from the inlet to Pyramid Lake to the Wadsworth gage, and the East Fork Owyhee River at the Nevada-Idaho stateline. Pursuant to the 1987 Amendments to the Clean Water Act, authorized tribes rather than states have authority for setting water quality standards and implementing regulations for waters on tribal lands.

Workshops are held to obtain comments on proposed revisions to water quality standards from federal, state and local agencies and the general public. After consideration of the public comments, the proposed standards are presented at a public hearing to the State Environmental Commission (SEC) for review and adoption. Standards adopted by the SEC are then subject to approval by the USEPA.

Public Workshops:

Tuesday, August 27, 2002  
Nevada Division of Environmental Protection  
123 W. Nye Lane  
Carson City, NV 89701  
Conference Room 217  
6:00 to 8:00 pm

Thursday, August 29, 2002  
Elko Convention Center  
700 Moren Way  
Elko, NV 89801  
6:00 to 8:00 pm

Wednesday, September 4, 2002  
Las Vegas Water District  
1001 South Valley View  
Las Vegas, NV 89107  
Mead Conference Room  
6:00 to 8:00 pm

For questions, comments or additional information  
please contact:

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